

Leiomyosarcoma of the Scrotum Arising from the Dartos Muscle: A Rare Clinicopathological Entity

PAOLO PERSICHETTI¹, FILIPPO DI LELLA¹, GIOVANNI F. MARANGI¹, BARBARA CAGLI¹,
PIERFRANCO SIMONE¹, STEFANIA TENNA¹, ANNALISA COGLIANDRO¹, FRANCESCO AMBROSINO²,
VINCENZO ESPOSITO^{3,4}, ANGELA M. GROEGER^{4,5,6} and ALFONSO BALDI⁷

¹Department of Plastic and Reconstructive Surgery, Campus BioMedico University, Rome;

²Division of Surgery Cardarelli Hospital, Naples;

³Third Division of Infective Diseases, D. Cotugno Hospital, Naples, Italy;

⁴International Society for the Study of Comparative Oncology (ISSCO), Silver Spring, MD, U.S.A.;

⁵Division of Vascular Surgery, Cardarelli Hospital, Naples, Italy;

⁶Department of Cardio-Thoracic Surgery, University of Vienna, Vienna, Austria;

⁷Department of Biochemistry and Biophysic "F. Cedrangolo", Section of Pathology, Second University of Naples, Italy

Abstract. Scrotal leiomyosarcoma is a rare tumour arising from the dartos layer. We describe a case of scrotal leiomyosarcoma in a 40-year-old man. The patient was treated by a wide surgical excision and no recurrence has been recognized 36 months later. A review of the literature is presented, summarizing the principal clinical and morphological characteristics of this rare tumor.

We report on a case of a scrotal leiomyosarcoma arising from the dartos muscle. This is an exceptionally rare soft tissue tumour. To date less than 40 cases have been reported in the international literature (1). The general prognosis is reported to be quite good, since there are rare lymphatic metastases. The current approach is wide surgical excision associated with adjuvant therapy.

Case Report

A 40-year-old man presented with an elastic, firm, non-tender mass of 2 centimetres in the left hemiscrotum. This lesion had appeared two years previously and its size increased in the last six months. The right testis, both epididymes and the spermatic cords were normal to palpation, while the inguinal nodes were not palpable.

Mass excision was performed. The excisional biopsy specimen was fixed in 10% buffered-formalin and paraffin-

embedded. Sections of 5- μ were stained with haematoxylin-eosin, haematoxylin-van Gieson and PAS-haematoxylin. Other sections were stained with immunohistochemical procedure, using avidin-biotin peroxidase complex (ABC) and antibodies specific for desmin and vimentin (all the reagents were from Dako, Carpinteria, CA, USA).

The histological examination showed the presence of a well-differentiated leiomyosarcoma with a low grade of malignancy (G1). The lesion contained smooth muscle cells with both cytological atypia and mitotic activity (Figure 1). Immunohistochemical study showed immunoreactivity for desmin and vimentin (data not shown).

The patient was then evaluated for distant metastatic spread with a total body CT scan that showed no distant metastasis. The patient was staged as IA (G1, T1b, N0, M0) (1).

Finally, to achieve local control of the disease, we performed a widening of excisional margins including the dartos and the overhanging skin around the scar of the previous excisional biopsy with 2.5-centimetre margins. The scrotum was reconstructed with local advancement flaps. Definitive histology showed the absence of tumour on the latter specimen and the postoperative course was uneventful and no recurrence has been recognized 36 months after.

Discussion

Leiomyosarcomas of the scrotum, not involving the testis, epididymis or spermatic cord, are rare (2), and belong to the group of subcutaneous superficial leiomyosarcomas (3). They present between the fourth and eight decades of life as a painless, slow-growing skin lesion. The duration of symptoms varies from several months to a few years.

Correspondence to: Dott. Alfonso Baldi, Via G. Orsi 25, 80128 Naples, Italy. Fax: +390815569693, e-mail: alfonsoaldi@tiscali.it

Key Words: Dartos muscle, leiomyosarcoma, reconstructive surgery.

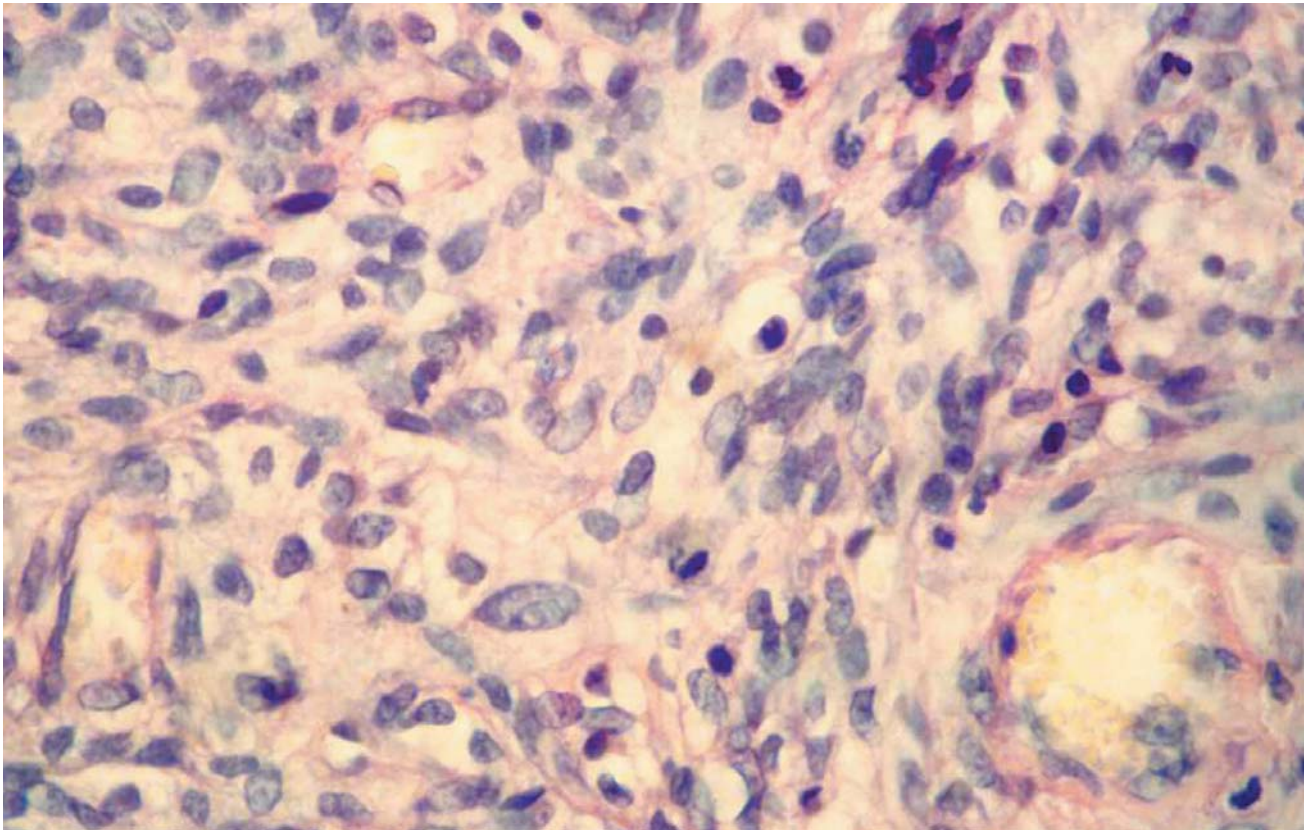


Figure 1. Section through the tumour showing atypical spindle cells, nuclear pleomorphism and several mitoses per high-power field, all characteristic of leiomyosarcoma. Haematoxylin- van Gieson, X 40.

After surgical excision, a local recurrence rate of 40% has been reported; total absence of distant metastases are reported (4).

Smooth muscle tumours in the skin can arise from the specialized muscle of the genital skin, in the dartos and in the vulvar region, and in the breast. To date less than 40 cases have been reported in the international literature. The current approach is wide surgical excision, often associated with adjuvant therapy. Radiotherapy appears to reduce local recurrence considerably. Regional lymphadenectomy should be performed in those patients with clinically suspect or histologically proven lymphatic spread.

Acknowledgements

This work was supported by FUTURA-Onlus and I.S.S.C.O.

References

- 1 American Joint Committee on Cancer. AJCC Cancer Staging Manual, Soft Tissue sarcoma. 5th ed. Philadelphia, Pa: Lippincott-Raven Publishers, 149-156, 1997.
- 2 Jeddy TA, Vowles RH and Southam JA: Leiomyosarcoma of the dartos muscle. *Br J Urol* 74: 129-130, 1994.
- 3 Fields JP and Helwig EB: Leiomyosarcoma of the skin and subcutaneous tissue. *Cancer* 47: 156-159, 1981.
- 4 Flotte TJ, Bell DA, Sidhu GS and Plair CM: Leiomyosarcoma of the dartos muscle. *J Cutan Pathol* 8: 69-74, 1981.
- 5 Collier DS, Pain JA and Hamilton-Dutoit SJ: Leiomyosarcoma of the scrotum. *J Surg Oncol* 34: 176-178, 1987.
- 6 Fisher C, Goldblum JR, Epstein JI and Montgomery E: Leiomyosarcoma of the paratesticular region: a clinicopathologic study. *Am J Surg Pathol* 5: 1143-1149, 2001.

Received May 18, 2004
Accepted August 2, 2004